

## Two new species of *Ranatra* from Brazil

(Insecta, Heteroptera, Nepidae)

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*Ranatra flokata*, spec. nov., from Amazonas and *R. machrisi*, spec. nov. from Goiás are described and compared with similar species.

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### Introduction

The interesting new species *Ranatra flokata* described below was collected 35 years ago by Dr. E. J. Fittkau in connection with Amazonian research in cooperation of the Max-Planck-Institute for Limnology and the Instituto Nacional de Pesquisas da Amazonia. As to our knowledge no further specimens have been found and the first author wants to include the species in his work on water bugs of Minas Gerais. It was decided to describe this species on the single specimen.

In addition a new species collected during the Machris Expedition of the Los Angeles County Museum to Goiás is described.

*Ranatra* Fabricius is a cosmopolitan genus with highest species density in South America (Nieser 1975). Most species hide between plants in quiet waters awaiting prey, but a few hide, at least occasionally, in mud on the bottom of the habitat as Nepinae do. The American species of *Ranatra* have been summarized by DeCarlo (1964). His identification key (DeCarlo 1973) is, however, difficult to use without reliable reference specimens. South American *Ranatra* are on the whole very uniform with scanty diagnostic characteristics (Lansbury 1974), the new Amazonian species is a pleasant exception on this rule.

Measurements are in mm.

### *Ranatra flokata*, spec. nov.

Figs 1-8

**Types:** Holotype: ♂, BRASIL: Amazonien, Ig(arapé) Aduja, mitlerer Rio Negro, oberhalb des Rio Branco (Exkursion 4.-16. Feb. 1962), leg. E. Fittkau (Zoologische Staatssammlung, München).

### Description

Measurements. Body length (without siphon) 45, respiratory siphon 21.4, width of head 2.35, width of an eye 1.16, interocular space 1.02; pronotum anterior width 2.75, humeral width 3.29, along median line length of anterior lobe 7.9, length of posterior lobe 3.2, total length 11.1; fore leg, length of coxa 6.5, femur length of distal part (measured in relation to the larger inner tooth) 3.4, length of proximal part 6.0; middle leg length of femur 17.6, length of tibia 18.4; hind leg length of femur 19.2, length of tibia 21.6.

Colour. Light brown, scutellum, membrane and apertures of static organs darker; fringe of siphon mixed with blackish hairs; dorsum of abdomen with a reddish tinge. Operculum and legs yellowish, tibiae indistinctly banded with light brown, middle and hind femur unicolorous, fore coxae, femurs and pronotum covered with a crust of silt.

Head. Lora indistinctly separated from the eyes; clypeus distinctly higher than lora, interoculus tuberculate (Fig. 1), distinctly narrower than width of an eye; in lateral view eyes reaching just below the venter of head. Right antenna as in fig. 6, left antenna with the finger like projection of segment 2 absent.

Thorax. Pronotum with a broad anterior collar, transverse sulci virtually restricted to the dorsal face of prothorax. Prosternum somewhat flattened with a poorly defined median carina in anterior fifth. Prothoracic pit (posteriorly on prosternum) well developed, anterior margin of mesosternum with a pair of wart-like swellings. Distance between middle coxae half the distance between hind coxae (0.2/0.4). Metasternum posteriorly emarginate.

Femur. Anterior femur (Figs 2, 3) with a tooth on inner side and a rounded swelling on outer side near distal third. Middle femur when stretched along body reaching caudal  $\frac{1}{2}$  of sternite V, hind femur reaching just over halfway sternite VI.

Siphon. Short (when folded back over dorsum reaching anterior fifth of hemielytra or the level of posterior margin of abdominal sternite 3) with a strongly developed ventral fringe of hairs, broadening caudally, the length of the hairs caudally at least twice the width of the siphon.

♂ genitalia. Genital capsule (Fig. 4), paramere comparatively stout and of a form reminding some Old World species (Figs 7, 8), posterior diverticulum turned slightly upward, not widened, sclerotized lever rods of vesica indistinct (Fig. 5, compare Lansbury 1974 for discussion and figures of inner structure of genital capsule of various American *Ranatra* species).

**Etymology.** *Flokatos* (*phlokatos*), greek adjective meaning "fringed" referring to the characteristic fringe ventrally on siphon.

**Comparative notes.** The form of the paramere and the strong fringe on the respiratory siphon set this species apart from all South American species. The paramere reminds somewhat of the East African *R. fuscoannulata* or the Asian *R. gracilis*-group (Lansbury 1972), species of the latter also have a tuberculate interoculus and short siphon. All are distinctly smaller, differ in various details of structural characteristics and lack the thick fringe of hairs ventrally on siphon. There are only two other South American species with a tuberculate interoculus. Of these *R. weberi* De Carlo known only by the holotype from Brazil, Amazonas is much smaller, body length 24 mm. *R. tuberculifrons* Montandon from the Guyanas and Brazil, Amazonas (Nieser 1975) is about the same size but has a more slender paramere especially in the upper part. In addition the fore femur is also distinctly more slender and the siphon lacks the thick fringe of hairs.

**Remarks.** The asymmetry of the antennae illustrates once more that these organs in Nepidae are prone to variation and should, especially in single specimens or populations, not be relied on too heavily in distinguishing species.

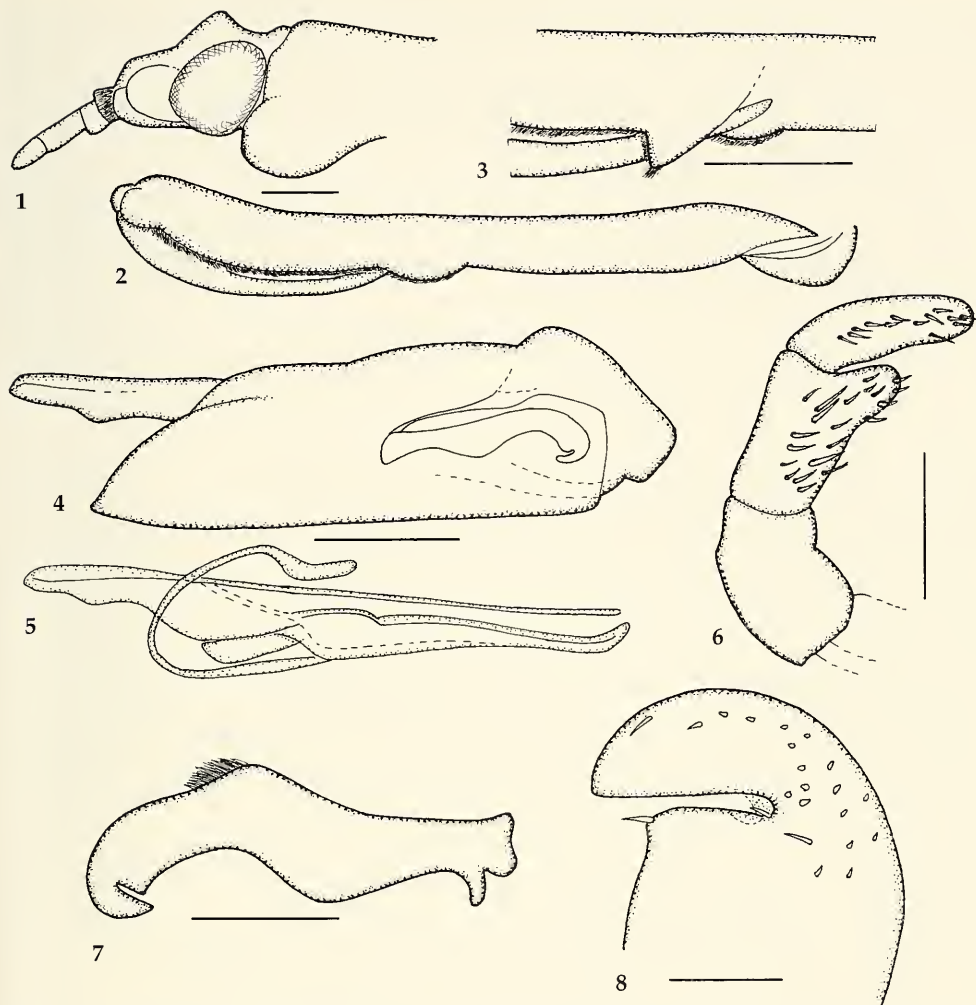
*Ranatra machrisi*, spec. nov.

Figs 9-11, 13-15, 17-19

**Types.** Holotype: ♂, Brasil, Goiás, 24 km E Formosa, May 29, 1956 (MNRJ). – Paratype (allotype): ♀, same data as holotype (Los Angeles County Museum, Los Angeles, Ca./U.S.A.)

**Description**

Measurements. Body length (without siphon) ♂ 37, ♀ 41; respiratory siphon ♂ 25.5, ♀ 27; width of head ♂ 3.32, ♀ 3.65; width of an eye ♂ 1.20, ♀ 1.32; interocular space ♂ 0.92, ♀ 1.02; pronotum anterior width ♂ 2.52, ♀ 2.70; humeral width ♂ 3.30, ♀ 3.68; along median line length of anterior lobe ♂ 6.6, ♀ 7.1; length of posterior lobe ♂ 3.0, ♀ 3.3; total length ♂ 9.6, ♀ 10.4; fore leg, length of coxa ♂ 7.8, ♀ 9.0; femur length of distal part (measured in relation to the inner tooth) ♂ 4.1, ♀ 4.3; length of proximal part ♂ 7.6, ♀ 8.3; middle leg length of femur ♂ 19.0, ♀ 20.3; length of tibia ♂ 20.7, ♀ 22.3; hind leg length of femur ♂ 20.2, ♀ 21.1; length of tibia ♂ 24.6, ♀ 25.9.



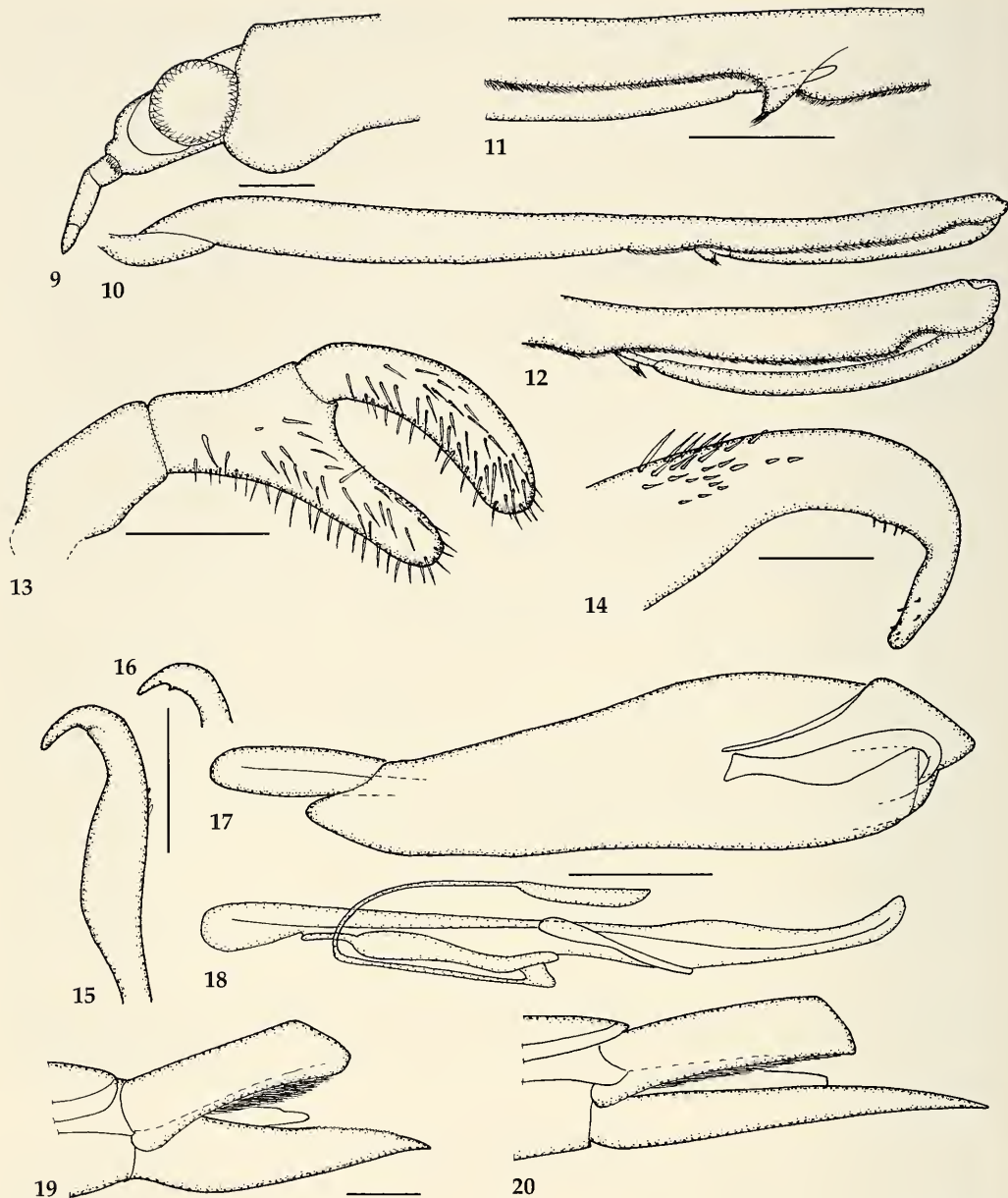
Figs 1-8. *Ranatra flokata*, spec. nov. Holotype ♂. 1. Head and anterior part of prothorax in lateral view. 2. Anterior femur and tibia lateral view. 3. Anterior femur, tibia and tarsus, detail inner view. 4. Genital capsule. 5. Sclerites inside genital capsule. 6. Antenna. 7. Paramere. 8. Apex of paramere. Scale bars = 1 mm.

Colour. Rather uniform dull medium brown, membranes darker. venter slightly lighter than dorsum (with closed hemielytra). Anterior femur and tibia, middle and hind femora yellowish with indistinct light brown mottling.

Head (Fig. 9). Lora distinctly separated from eyes, clypeus slightly higher than lora, eyes distinctly wider than interoculus. Antenna as in fig. 13.

Thorax. Pronotum with collar on anterior margin poorly developed, transverse sulci deep, reaching halfway down the sides of prothorax. Prosternum with a low broad keel flanked by a pair of shallow but broad grooves running from anterior margin backward to level of sulci or slightly beyond. Prothoracal pit poorly defined, no pair of wartlike tubercles on anterior margin of mesosternum. Distance between intermediate coxae twice the distance between posterior coxae (0.4/0.2). Metasternum a narrow carina with posteriorly diverging flanges laterally.

Femur. Anterior femur (Figs 10,11) with tooth at distal third and a slight shallow indentation apically. Middle femur in male just reaching base of operculum, in female caudal quarter of sternite 6;



Figs 9-11, 13-15, 17-19. *Ranatra machrisi*, spec. nov. 9. Head in lateral view, allotype ♀. 10. Anterior femur, tibia and tarsus, lateral view, holotype ♂. 11. Detail of 2, inner view. 13. Antenna allotype ♀. 14. Apex of paramere, holotype. 15. Paramere, holotype. 17. Genital capsule, holotype. 18. Sclerites inside genital capsule, holotype. 19. Genital operculum lateral view, allotype ♀.

Figs 12, 16, 20. *Ranatra montei* De Carlo. 12. Apex of femur, tibia and tarsus. 16. Apex of paramere. 20. Female genital operculum, lateral view. Scale bars: Figs 9-12, 16-20: 1 mm; 7, 15: 0.5 mm; 6, 13: 0.25mm; 8, 14: 0.1 mm.

hind femur in male just not reaching apex of operculum, in female reaching halfway operculum. Siphon. When folded back reaching humeri of pronotum in both sexes.

♂ genitalia. Genital capsule (Fig. 17), paramere with the subapical tooth reduced, nearly absent

(Fig. 15), posterior diverticulum turned slightly upward, not widened, sclerotized lever rods of vesica indistinct (Fig. 18, compare Lansbury 1974 for discussion and figures of inner structure of genital capsule of various American *Ranatra* species).

♀ genitalia. Genital operculum reaching distinctly beyond apex of abdomen, dorsal margin serrate (Fig. 19).

**Etymology.** Machrisi, genitive of Machris, named after the family who sponsored the expedition during which the specimens were collected (Truxal 1957).

**Comparative notes.** Very similar to *Ranatra montei* De Carlo which is common in Minas Gerais and Goiás in similar streams as *R. machrisi* was apparently found (Truxal 1957). Differences are the notch apically in fore femur which is more distinct in *R. montei* (Figs 10, 12); the subapical tooth of paramere which is more distinct in *R. montei* (Figs 15, 16) and the female genital operculum which in *R. montei* is distinctly longer but not serrate dorsally (Figs 19, 20).

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